
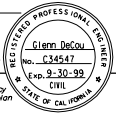




DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
 REGISTERED CIVIL ENGINEER					
July 1, 1999 PLANS APPROVAL DATE					
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POSITIVE JOINTS

							BAR AND STRAP (CSP ONLY)				ANGLE							
COUPLING TYPE	PIPE CORRUPTION (mm)	PIPE SIZE (mm)	W OR A	PIPE WALL THICKNESS		BAND THICKNESS		STRAP THICKNESS (mm)	BOLTS (mm ø)	BAR DIA (mm)	BAR YIELD STRENGTH (MPa)	DIMENSIONS		BOLTS (No., -mm ø)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				CSP (mm)	CAP (mm)	CSP (mm)	CAP (mm)					CSP (mm)	CAP (mm)	CSP	CAP	CSP	CAP	
HUGGER	68 x 13 REROLLED END	THROUGH 1200	267	2.77		1.63		2.01	13	22	220							
		1350 - 1650	267	2.77		1.63		DOUBLE 2.01	13	22	220							
		THROUGH 1350	267	1.63 - 2.01		1.63		2.01	13	22	220							
		THROUGH 1500	267	3.51		2.01		DOUBLE 2.01	13	22	220							
		1650 - 1800	267	3.51		2.77		DOUBLE 2.01	13	22	220							
		THROUGH 1800	267	4.27		2.77		DOUBLE 2.77	13	22	310							
	75 x 25 REROLLED END	1200 - 2100	267	2.77		2.01		DOUBLE 2.01	13	22	220							
		1200 - 2250	267	1.63 - 2.01		1.63		DOUBLE 2.01	13	22	220							
		2400 - 2550	267	2.01		2.01		DOUBLE 2.01	13	22	220							
		2250 - 3000	267	2.77		2.77		DOUBLE 2.77	13	22	310							
HAT BAND	68 x 13 REROLLED END	300 - 750	70	1.63 - 2.01		1.63						64 x 38 x 4.8		1-13			3-15 mm	
		900 - 1200	70	1.63		1.63						64 x 38 x 4.8		1-13		3-12.7 mm	3-15 mm	
		900 - 1200	70	2.01		2.01		2.01	13	22	220							
		THROUGH 1050	70	2.77		2.01		2.01	13	22	220							

DOWNDRAIN

								BAR AND STRAP (CSP ONLY)			ANGLE						
COUPLING TYPE	PIPE CORRUGATION (mm)	PIPE SIZE (mm)	W OR A (mm)	PIPE WALL THICKNESS		BAND THICKNESS		STRAP THICKNESS (mm)	BOLTS (mm ø)	BAR DIA (mm)	DIMENSIONS		BOLTS (No. -mm ø)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				CSP (mm)	CAP (mm)	CSP (mm)	CAP (mm)				CSP (mm)	CAP (mm)	CSP	CAP	CSP	CAP	
TWO PIECE INTEGRAL FLANGE	38 x 6.5	150	178	1.63		1.32							3-10				
	38 x 6.5	200 - 250	178	1.63	1.52	1.63	1.52						3-10	3-10			
ANNULAR	68 x 13	THROUGH 600	305	1.63	1.52	1.63	1.52				51 x 51 x 4.8	51 x 51 x 4.8	3-13	3-13	3-9.5 mm	3-9.5 mm	3-15 mm
HUGGER	68 x 13 REROLLED END	THROUGH 600	267	1.63		1.63		2.01	13	22	51 x 51 x 4.8	51 x 51 x 4.8	3-13	3-13	3-9.5 mm	3-9.5 mm	3-15 mm

NOTES

- All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
- For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
- Tension straps may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
- Use 32 mm gage line dimension on attached angle leg for rivets and spot welds.
- Band thickness shall not be less than:
 - 3 standard thickness lighter than the thickness of the pipe for corrugated steel pipe,
 - 2 standard thickness lighter than the thickness of the pipe and in no case lighter than 1.5 mm for corrugated aluminum pipe.
- Dimensions, thickness and strengths shown are minimum.
- For pipe arches use same width band as for round pipe of equal periphery.
- Fillet welds of equivalent strength may be substituted for spot welds or rivets.
- Spot welds shall develop minimum required strength of strap.
- Pipe with rerolled ends having at least two 68 mm x 13 mm annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 68 mm x 13 mm corrugations.
- Two piece bands are required for pipes greater than 1050 mm diameter.
- For downdrain applications, two piece integral flange couplers shall have factory applied sleeve type rubber gaskets with a minimum length of 175 mm measured along the length of the pipe.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CORRUGATED METAL PIPE COUPLING DETAILS NO. 7 POSITIVE JOINTS AND DOWNDRAINS

NO SCALE

ALL DIMENSIONS ARE IN
MILLIMETERS UNLESS OTHERWISE SHOWN

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